

CLAIMS:

1. According to the invention there is provided a leaf trap device for use with a swimming pool having a water recirculation system, the leaf trap device being connectable to the water recirculation system and comprising

a tank having a water inlet opening through which water from the swimming pool can enter the tank, a water outlet opening through which water can be discharged from the tank and a leaf discharge opening through which leaves which collect in the tank, in use, can be discharged from the tank;

a filter device that is located in the tank for separating leaves from water entering the tank through the water inlet opening, the filter device being operable to allow the passage of water but preventing the passage of leaves therethrough, the filter device having a configuration which divides the tank into a first compartment in which said water inlet opening and said leaf discharge opening are located and wherein leaves entering the tank are trapped, in use; and a second compartment in which said water outlet opening is located;

a discharge valve that is located in the leaf discharge opening and that is displaceable between an open condition wherein water in the tank and leaves trapped in the first compartment thereof can be discharged from

the tank, and a closed condition wherein the leaf discharge opening is closed off; and

control means that is connectable to the pump of the water recirculation system, for switching the pump on and off and that is operable to control opening and closing of the discharge valve.

2. A leaf trap device as claimed in claim 1, wherein the discharge valve includes a valve seat which surrounds the leaf discharge opening and a piston/cylinder mechanism including a valve member that is connected to the piston of the piston/cylinder mechanism, the piston being displaceable between a retracted condition wherein the valve member is spaced from the valve seat thereby opening the leaf discharge opening and an extended condition wherein the valve member is seated against the valve seat thereby closing off the leaf discharge opening.
3. A leaf trap device as claimed in claim 2, wherein the cylinder of the piston/cylinder mechanism is connectable to a water mains supply for displacing the piston and thereby the valve member into said open and closed conditions under water mains pressure.
4. A leaf trap device as claimed in claim 3, wherein the flow of water into the cylinder of the piston/cylinder mechanism is controlled by means of cylinder valves, the operation of which is controlled by the control means.

5. A leaf trap device as claimed in claim 4, wherein the tank includes an auxiliary water inlet opening that is connectable to a water mains supply and through which the tank can be filled with water from the water mains supply after water has been discharged therefrom through the leaf discharge opening, for priming the tank.
6. A leaf trap device as claimed in claim 5, which includes a primer valve for controlling opening/closing of the auxiliary water inlet opening.
7. A leaf trap device as claimed in claim 6, wherein the control means is connected to the primer valve and is operable to control the operation of the primer valve in an arrangement wherein the primer valve is opened when displacement of the piston of the piston/cylinder mechanism commences, for displacing the valve member of the discharge valve into a closed condition.
8. A leaf trap device as claimed in claim 7, which includes an air vent non-return valve, for allowing air within the tank to be vented therefrom as water enters the tank when the tank is primed, in use.
9. A leaf trap device as claimed in claim 8, which includes at least one water jet that is connected to said auxiliary water inlet opening for directing a spray of water when the auxiliary water inlet opening is opened, at the

moveable valve member of the discharge valve, for cleaning debris therefrom prior to the valve member becoming seated against the valve seat, in use.

10. A leaf trap device as claimed in claim 9, wherein the control means is in the form of an electronic programmable control device which is operable to control switching of the pump on and off and to control opening and closing of the cylinder valves and the primer valve.
11. A leaf trap device as claimed in claim 10, wherein the control means is operable to commence a leaf scavenging cycle for discharging leaves from the tank by, in sequence, switching off the pump, actuating the cylinder valves to cause the retraction of the piston of the piston/cylinder mechanism to open the discharge valve and after a predetermined period of time allowing for water and leaves to be discharged from the tank, actuating the cylinder valves to cause the extension of the piston for closing the discharge valve and simultaneously opening the primer valve for cleaning the valve member and priming the tank, and switching the pump on after a predetermined time has elapsed sufficient to allow the tank to be primed with water.
12. A leaf trap device as claimed in claim 11, which includes a pressure sensor for sensing water pressure within the tank, the control means being connected to the pressure sensor for receiving an input therefrom

and being operable to commence a leaf scavenging cycle in response to the pressure dropping below a predetermined reference pressure valve.

13. A leaf trap device substantially as described in the specification.
14. A leaf trap device substantially as described in the specification, with reference to and as illustrated in the accompanying diagrammatic drawings.